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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,255	12/15/2003	Peter Mori	0127-086P	5809

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EXAMINER

KRUER, STEFAN

ART UNIT

PAPER NUMBER

3654

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/737,255	Applicant(s) MORI ET AL.	
	Examiner Stefan Kruer	Art Unit 3654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-7 is/are rejected.
- 7) ☒ Claim(s) 2-4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/26/2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

Claim 6 is objected to because of the following informalities: the word "containing" following the word "material" is superfluous. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5 and 7 are rejected under 35 U.S.C. 103(a) as obvious over United States Elevator Corp. (DE 2251124, here forth referred to as "US Elevator") in view of Jones, et al (5,957,251).

In Claim 1, whereas US Elevator discloses two brake blocks (62 and 66) and that block 62 is "...made from a hard metal of a relatively low frictional (wear) resistance, such as carbon steel..." (Page 13), US Elevator is silent regarding the material of the mating brake block 66, other than by stating that the braking effect is "... primarily achieved by brake shoe 66" (Page 14). Jones discloses that conventional "... brakes for ... cars, have been made from cast iron rotors... engaged by brake... shoes..." of "...semi-metallic or non-asbestos organic..." material (Col. 1, Line 19). Therefore, it would have been obvious to one of ordinary skill in the art to supply the US Elevator reference with brake blocks of a different material based on the use of dissimilar materials or materials of unique hardness as mating surfaces for braking by frictionally induced loads to limit wear to one of the two mating surfaces, as common to the brake systems of the automotive (and rail) industries (whereby, a brake rotor and shoe are analogous to the brake block of the instant invention).

In Claim 5, while US Elevator discloses two brake blocks, one being made from carbon steel and the other undefined, Jones discloses "... a brake having at least one braking component... (Col. 6, Line 17) and "...the braking component may be any component that generates a braking or frictional force..." (Col. 2, Line 26). He adds that the braking component "... has a friction material..." of "... ceramic-metal composite (CMC) that is comprised of a ceramic phase and a metal phase dispersed within each other" (Col. 3, Line 13), and that "the CMC portion of the brake may be made by any convenient or known powdered metal or ceramic processing technique" (Col. 6, Line 48), thereby promoting a commercially viable, wear and temperature resistant invention. Therefore, to modify US Elevator with the teachings of Jones would have been obvious to one of ordinary skill in the art, in order to gain the performance and commercial benefits of Jones.

With respect to Claim 7, Jones states, "Even more preferably, each of these braking components has a friction material..." (Col. 6, Line 22) whereby, said friction material is a ceramic-metal composite (CMC) and "the CMC portion of the brake may be made by any convenient or known powdered metal or ceramic processing technique" (Col. 6, Line 48). Therefore, to modify the reference of US Elevator with the disclosure of Jones would have been obvious to one of ordinary skill in the art, in order to further reduce downtime through enhanced service life of the pair of brake blocks.

Claim 6 is rejected under 35 U.S.C. 103(a) as obvious over US Elevator in view of Jones and in further view of Suenaga et al. (4,807,728).

Whereas US Elevator discloses two brake blocks (62 and 66) and Jones discloses, "...the braking component may be any component that generates a braking or frictional force..." whereby as example "...either the brake rotor or brake pad is a braking component..." having "... a friction material..." of "... ceramic-metal composite (CMC)..." Jones refers to the fabrication of brake rotors made from cast iron.

Suenaga, however, confirms soft cast iron ("flaky graphite cast iron", term as corroborated by Pollard (Col. 5, Line 14)) as "widely used as brake members for ... brake drums and rotors" (Col. 1, Line 9). Therefore, to modify the invention of US Elevator with teachings of Jones and the disclosure of Suenaga would have been obvious to one of ordinary skill in the art, to maintain a degree of simplicity (by utilizing a block of readily available material) while enhancing performance (through the hardening of one of two frictional surfaces).

Allowable Subject Matter

Claims 2, 3, 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 2 contains allowable subject matter because the teachings of the prior art of record taken as a whole do not show or render obvious the combination set forth including that one brake block be made of aluminum-bronze.

Though the use of soft cast iron as a brake block is common, as disclosed in Pollard (3,239,319) in that "... for a great many years the vast majority of brake shoes ... have been made of cast iron" and that "... the shoes are made of relatively soft cast iron..." (Col. 5, Lines 7 and 13), the use of aluminum-bronze has not been taught. While Jones discloses the use of aluminum-bronze as an "exemplary aluminum alloy" as the metal phase of a ceramic-metal composite (CMC) for frictional material (Col. 3, Line 36) as well as "a disk brake having an aluminum alloy brake rotor..." (Col.6, Line 26) and Cline in *Mechanical Overhaul Procedures for Hydroelectric Units* (U.S. Dept. of

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Interior, Bureau of Reclamation, July 1994) teaches that to promote resistance to galling, dissimilar materials as mating surfaces for his application should be used with the notable preference for aluminum-bronze and austenitic stainless steel, the use of aluminum-bronze as a primary brake material lacks precedence in the referenced art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Knorr-Bremse (DE 4322113), Winkler (4,653,612) and Akebon et al (JP 9264355) references are cited for the application of ceramic coatings on disc brakes, speed limiter for lifts and the injection of ceramic structure into cast iron material for the manufacture of brake blocks, respectively.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Kruer whose telephone number is 571.272.5913. The examiner can normally be reached on M-F, 08:00 - 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathy Matecki can be reached on 571.272.6951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 27 Oct. 2005

KATHY MATECKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600